

PRODUCT SUPPORT MANUAL

**Y1-03-0116
Rev. C**



L-32 Field Marker Lighting System

**L-32
L-32 RC
L-32 RCL
CC-1**

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FIELD MARKER LIGHT SYSTEM

FEATURES:

- Remote control operation
- Supports any number of incandescent lights
- Configurable to any requirement
- Color or infrared filters (optional)
- Easily transportable
- Water resistant

1.0 INTRODUCTION

The ACR Field Marker Light System is an evolutionary refinement of signaling technology that exemplifies how we can improve upon and redefine the application of existing systems. Working with the United States military, ACR Electronics provided a solution to a critical combat situation problem.

Under certain circumstances, portable landing field/drop zone lights may, in a hostile environment, draw fire when activated. By making them remotely controlled, personnel can get under cover after the lights are placed, reducing the risk of discovery. Once positioned, the lights need only be turned on for the minimum time needed to bring in aircraft.

They can be activated and deactivated in any sequence by remote control.

The ACR Field Marker System was used during Operation Desert Storm, a testimony to its readiness, versatility and reliability.

Although the need and the concept had developed from a specific combat situation, ACR's Field Marker Systems can find applications in other areas as well, using either remote control or manual activation.

The system can be used for rescue missions by special forces or as a portable landing system in place of costly permanent air field systems; in military situations, the system can help guide cargo aircraft for supply drops or deploy airborne forces.

The remote control switching module of the Field Marker Light Systems can be readily adapted to any situation requiring a remote controlled electrical on/off function. The small size makes it easy to integrate with any design configuration, and the unit is weather resistant.

Since the introduction of the Field Marker System, ACR has expanded it to be available in a sequential version as well.

2.0 COMPLETE SYSTEM OVERVIEW

The **ACR/L-32** or **L-32RCL** may be plugged directly into the BA-4386 or BA-5598 Battery and act as a stand alone, manually controlled light. For remote controlled operation, the **ACR/L-32** may be inserted into the **ACR/L32RC** which in turn is inserted into the battery. Remote controlled operation of the **ACR/L-32RCL** is accomplished by plugging the unit into the battery, if the light is "off" this is the remote controlled mode.

The combination **ACR/L-32/L-32RC** (*Figure 5*) or the **ACR/L-32 RCL** (*Figure 6*) system is operated in conjunction with the PRC-77 or an equivalent FM transmitter to which the **ACR/CC-1** unit is affixed to input ON/OFF codes. Any number of lights may be operated with the system.

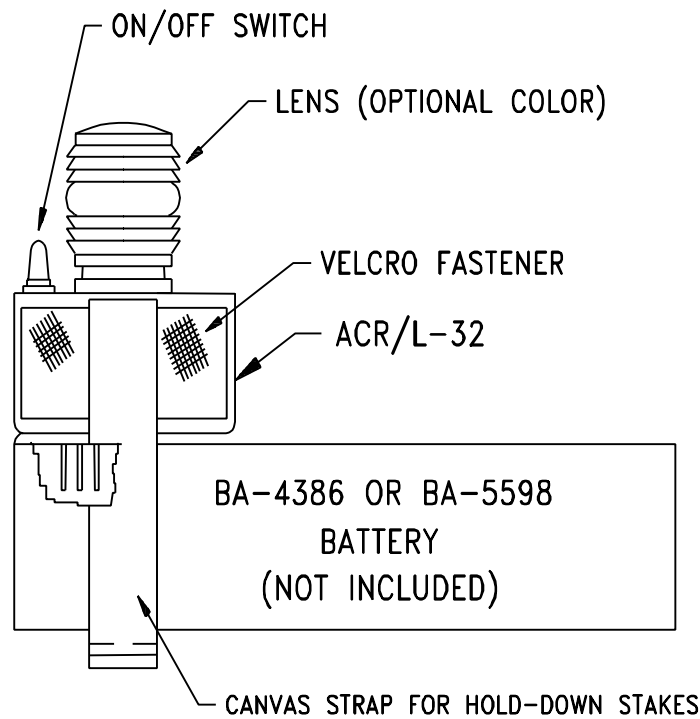
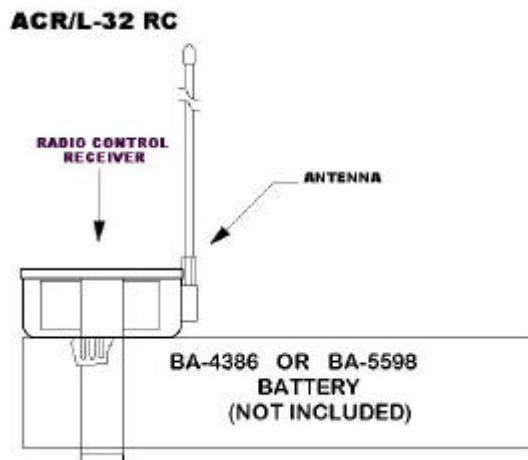


Figure 1
ACR / L-32 Light

3.0 SUBSYSTEMS

1. The Model **ACR/L-32** Field Marker Light (See Figure 1)
The **ACR/L-32** light is designed to plug into a BA-4386 or BA-5598 Battery. Canvas straps are provided for holding the light to the battery, and the combination to the ground (use spikes or long nails to secure the canvas strap to the ground). Lenses in color or IR transmitting are available. The **ACR/L-32** light may be used alone or in combination with Items 2, 3 and 4 below, for Remote Radio Frequency control.
2. The Model **ACR/L-32RC** Remote Control Unit (See Figure 2)
The **ACR/L-32RC** remote control is designed to be installed between the **ACR/L-32** light and the battery. The remote control is a FM receiver that will supply power to the light when it receives the proper "ON" code. It will shut off power to the light when it receives the proper "OFF" code. Selection of the turn "ON" turn "OFF" codes is made by removing the **ACR/L-32RC** cover and moving the mini-switches to the desired codes. Code Seven (7) is not switch selectable, but will always shut off all lights. The standard FM Frequency of the remote control is 46.75 MHz.
3. The **ACR/L-32RCL** Remote Controlled Light (See Figure 3)
The **ACR/L-32RCL**, Remote Controlled Light is a combination of the technology of the L-32 and the L-32RC. These two have been combined into one unit the size of a single L-32. The **ACR/L-32RCL** is plugged directly into the battery, the switch is designed to change the light from "Remote Controlled Mode" to "Manual Mode".
4. The Model **ACR/CC-1** Code Controller (See Figure 4)
The **ACR/CC-1** Code Controller is designed to interface with the PRC-77 Handset Microphone. It is a hand held tone generator which is used to send tone codes through the PRC-77. When using the **ACR/CC-1**, place it in direct contact with the microphone of the handset. Press the desired code on the CC-1 (you will hear the tone). Then key the microphone, instantly the light should respond.
5. PRC-77 or an Equivalent FM Transmitter
Shall be capable of transmitting FM signals on frequency of 46.75 MHz.
(Not provided)

Figure 2
ACR / L-32 RC
Remote Control



4.0 SYSTEM SET-UP AND OPERATION

A) Manual Activation

- 1) Insert the **ACR/L-32** or **ACR/L-32 RCL** Light into a BA-4386 or BA-5598 Battery.
- 2) Press the Push-ON, Push-OFF switch for the desired position (light will turn ON or OFF accordingly).
- 3) Repeat steps 1 and 2 for all additional lights.
(Each light must have its own battery.)

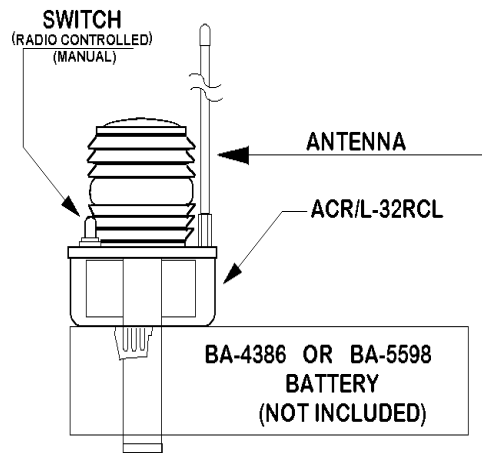


Figure 3
ACR / L-32 RCL
Remote Controlled Light

B) Remote Control Activation of the ACR/L-32, ACR/L-32RC Combination (See Figure 5)

- 1) Set the **ACR/L-32** to ON position (see steps 1 and 2 of Manual Activation).
- 2) Insert the **ACR/L-32RC** Remote Control in between the light and the battery.
- 3) Install the antenna into its base.
- 4) Secure the complete assembly of the light, the remote control and the battery together with the canvas strap, and secure it to the ground with long nails or stake-down pins.
- 5) At a remote location (up to 5,000 feet away from lights), set the frequency to 46.75 MHz on the PRC-77 or equivalent.

- 6) Set the PRC-77 to a transmit mode.
- 7) Turn the **ACR/CC-1** ON and position it next to hand-set of the PRC-77, make sure the microphone of the **ACR/CC-1** is facing the microphone on the hand-set.
- 8) On the key pad, press button number 1, 2, or 3 to turn light(s) ON, or press button number 4, 5, 6, or 7 to turn light(s) OFF (see Note 2).

Note 1: Pressing button number 7 on keypad will always turn OFF all lights regardless of their code configuration.

Note 2: The codes on the **ACR/L-32RC** Remote Control and the **ACR/L-32RCL** Remote Controlled Light are factory set to these values, however, other code combinations are available. For further information, please refer to section number 5, Customizing the Activation Code.

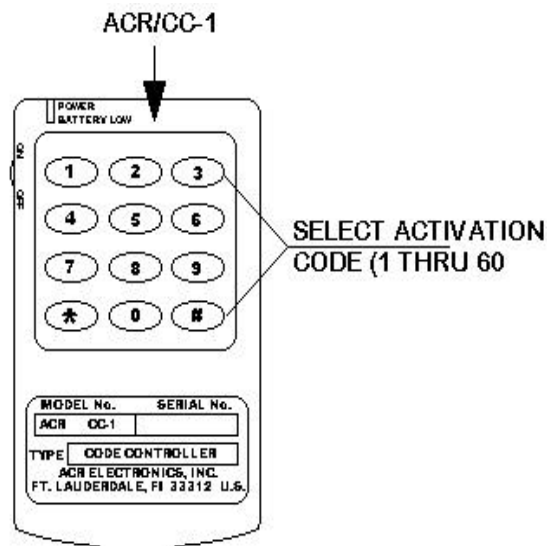


Figure 4
CC-1 Code Controller

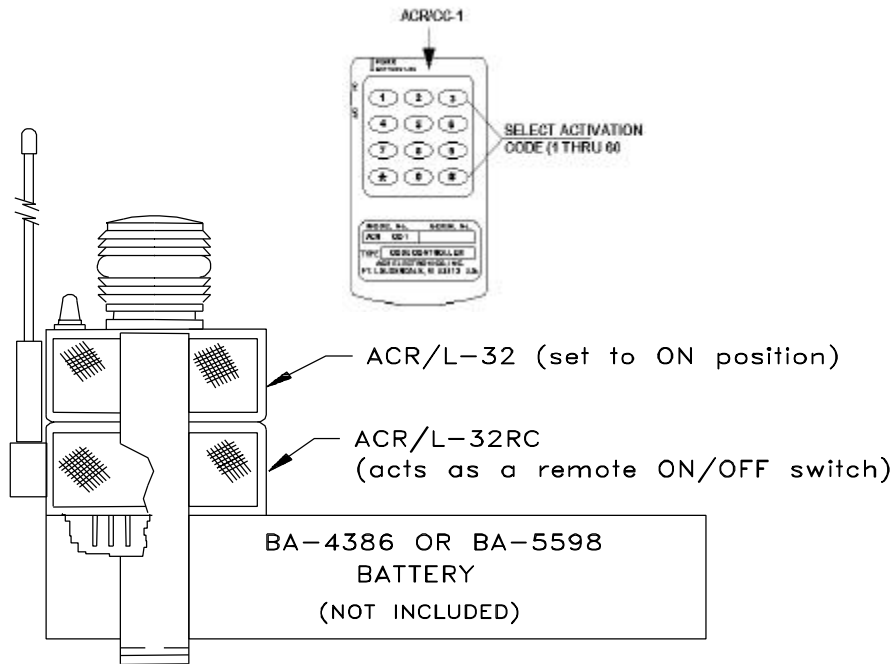


Figure 5: ACR/L-32 / L-32 RC Combo Remote Light System

C. Remote Controlled Activation of the ACR/L-32RCL unit (See Figure 6)

- 1) Insert the **ACR/L-32RCL** Remote Controlled Light directly into the battery.
- 2) Plug antenna onto banana plug.
- 3) Secure the complete assembly of the light, and battery together with the canvas hold down strap and secure the light to the ground with a long nail or stake down pins.
- 4) At a remote location (up to 5'000 feet away from the lights), set the Field Radio (PRC-77 or equivalent) to 46.75 MHz FM.
- 5) Turn on the **CC-1** and position it to the mouthpiece of the Field Radio hand set. (Position speaker of **CC-1** to microphone of handset)
- 6) Press the desired code (an audible tone should be heard) then press the Push to Talk switch to transmit the code. The light should react immediately.

- 7) Codes 4, 5, 6 are pre-programmed as "OFF" code at the factory and 1, 2, 3 are preprogrammed as "ON" codes. (See Note 2)

Note 1: Code number 7 is always the universal "OFF" and cannot be reprogrammed for any other function.

Note 2: The codes on the **ACR/L-32RCL** Remote Controlled Light are factory preset, however, other code combinations are able to be set by the user. For further information, please refer to section number 5 - Customizing the Activation Code.

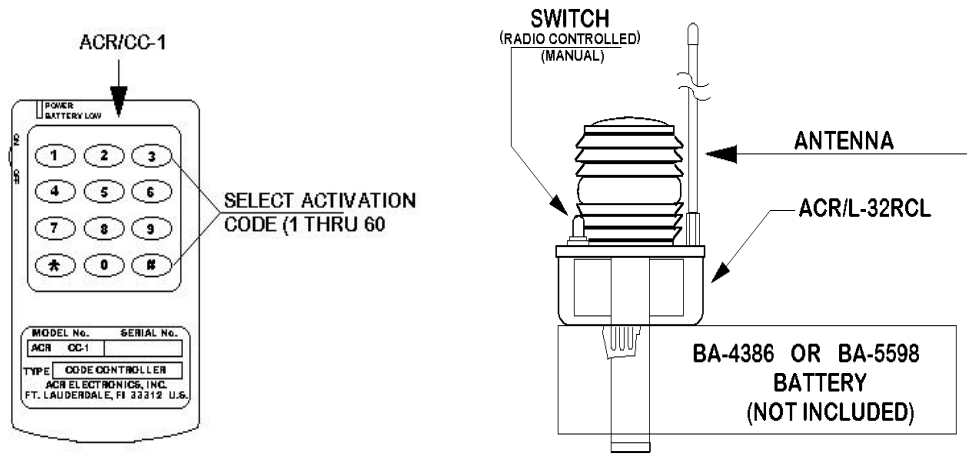


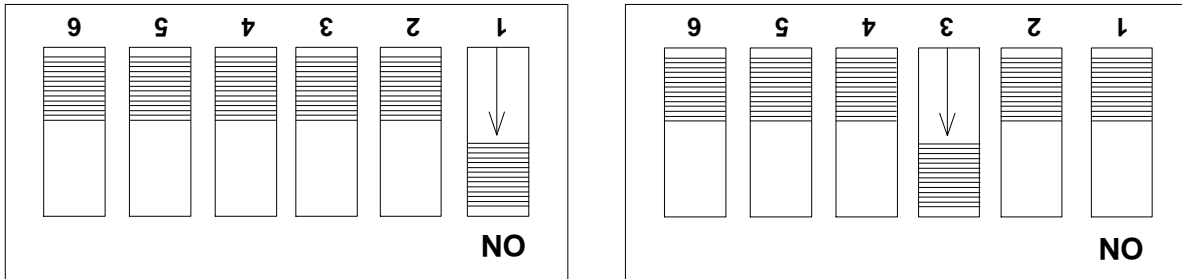
FIGURE 6
ACR / L-32 RCL / CC-1
REMOTE LIGHT SYSTEM

5.0 CUSTOMIZING THE ACTIVATION CODE

The **ACR/L-32RC** and **ACR/L-32RCL** are equipped with 2 code selectors, (See Figure 7) one for "ON", and the other one for "OFF" codes. Each one of the selectors has 6 DIP switches which are numbered from 1 to 6. Any one of the DIP switches may be positioned in either "ON" or "OFF" position. At the ACR factory the DIP switches of the "ON" code selector were set as follows: 1, 2, and 3 to "ON" position (away from case wall) and 4, 5, and 6 to "OFF" position (toward the case wall). The DIP switches of the "OFF" code selector were set as follows: 4, 5, and 6 in "ON" position (away from case wall), and 1, 2, and 3 in "OFF" position (toward the case wall).

With this configuration, code numbers 1, 2, or 3 will turn the **ACR/L-32** or **ACR/L-32RCL** Light system "ON", and code numbers 4, 5, or 6 will turn the light system "OFF".

Wall of case



ON or Activation Codes

This depicts a code 1 will turn the light "ON"

OFF or Deactivation Codes

This depicts a code 3 will turn the light "OFF"

Figure 7: SETTING THE ON AND OFF REMOTE CODES

6.0 CODE CONFIGURATION SET-UP

- A) To access the DIP switch
 1. Remove rear cover of the **ACR/L-32RC** unit by removing 4 phillips-head screws.
 2. Unscrew the lens assembly on the **ACR/L-32RCL**
- B) Pick code number(s) (1 through 6) which will turn the unit "ON". Code numbers not used for "ON" may be picked to turn the unit "OFF".

RULES:

There are a total of 6 combined ON-OFF code options.
Each selected code number may be used for one function only, "ON" or "OFF".

- C) Setting the "ON" code selector -

Set the DIP switches of the "ON" code selector to the "ON" position for desired "ON" activation code. Set all other DIP switches to "OFF" position.

Example 1:

Light shall turn "ON" when code 1 is selected.

Set-up: Set DIP switch number 1 to "ON" position (away from the case wall), set all others (2, 3, 4, 5, and 6) to "OFF" position (toward the case wall).

D) Setting the "OFF" code selector -

Set the DIP switches of the "OFF" code selector to the "ON" position for desired "OFF" activation code(s). Ensure that number(s) was not used for the "ON" activation code. Set all other DIP switches to "OFF" position.

Example 1: (continued)

Light shall turn "OFF" when code 6 is selected.

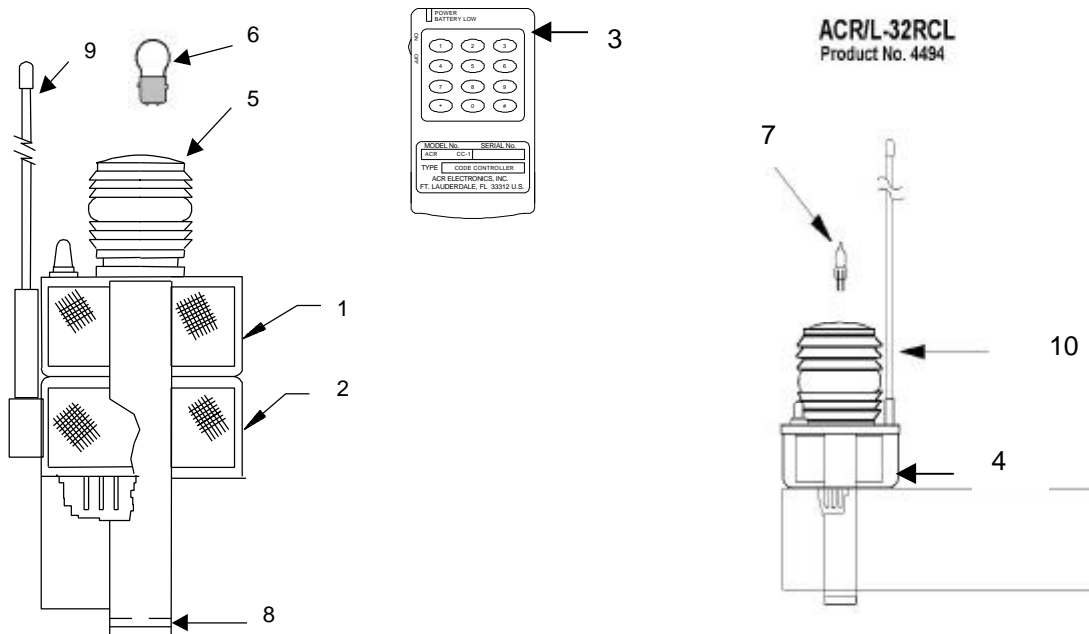
Set-up: Set DIP switch number 6 to "ON" position (away from the case wall), set all others (1, 2, 3, 4, and 5) to "OFF" position (toward the case wall).

E) Reinstall rear cover using the 4 Phillips-head screws on the **ACR/L-32RC** or replace the lens on the **ACR/L-32RCL**.

F) Test for proper "ON"-"OFF" activation by following the instruction in Section 4B Remote Control Activation of the **ACR/L-32RC** and 4C for the **ACR/L-32 RCL**.

REPLACEMENT PARTS

<u>ITEM NO.</u>	<u>ACR/PART NUMBER</u>	<u>DESCRIPTION</u>
1	4491	ACR/L-32
2	4492	ACR/L-32RC Unit
3	4493	ACR/CC-1
4	4494	ACR / L-32 RCL
5	9000.1	Lens, Clear (Standard)
	9000.2	Lens, Infra-Red (Optional)
	9000.3	Lens, Red (Optional)
	9000.4	Lens, Blue (Optional)
	9000.5	Lens, Green (Optional)
6	A1-14-0091	Lamp (GE 94 or 104)
7	A1-14-0101	Lamp, Halogen 2005
8	A3-06-1420	Hold Down Strap
9	A3-06-1565	Antenna for RC
10	A3-06-1565-1	Antenna for L-32 RCL



NOTES: